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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,854

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Gerardus Maria Van Erp

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EXAMINER

KWIECINSKI, RYAN D

ART UNIT

PAPER NUMBER

3635

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,854	Applicant(s) VAN ERP, GERARDUS MARIA	
	Examiner RYAN D. KWIECINSKI	Art Unit 3635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/2/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. **Therefore, the abraded surface area of the members, the sand or gravel coating, and the spacer members passing through the interconnecting members must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.**

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 13 and 15 is objected to because of the following informalities:

Claim 13, line 1, “located one” appears it should read –located in one--.

Claim 15, line 1, “provides” should be –provided--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-4, 10, 17, and 20-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2-4 and 20-24 all use the basic limitation “members”. It is unclear to what members the claim is referring. Is the claim referring to “tubular members”, “spacer members”, “interconnecting members”, or a combination of the three? Specifically in claim 24, what specifically is “some members” and “more members” and in what order are the members arranged? Is there a specific order in which the members are inserted into the mold, etc.?

Claim 10 is vague, indefinite, and confusing because the claim fails to mention what strength of the spacer members and the interconnecting members is being referred to. Is Applicant referring to the strength of each of the members in a certain

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direction individually or is the Applicant referring to the strength in a certain direction of the members when combined?

Regarding claim 17, the phrase "usually" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). Is the castable material concrete or is not concrete?

These claims have been examined as best understood.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 9-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,806,121 to Mangone in view of US 2001/0037533 A1 to Doyle et al.

Claim 1:

Mangone discloses a structural element formed from castable material, said structural element comprising:

a plurality of fiber reinforced plastic members (10, Fig.1; Column 6, 40-49; Column 9, lines 62-65);

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a plurality of fiber reinforced plastic, spacer members (6, Fig.1), said spacer members extending between said plurality of tubular members;

a plurality of fiber reinforced plastic, interconnecting members (4, 8, Fig.1), said interconnecting members positioned in a different orientation (perpendicular) to said spacing members; and

castable material (56, Fig.5) surrounding said members;

wherein the interconnecting members and spacer members intersect with each other (6 intersects with 4 and 8, Fig.1).

Mangone does not disclose tubular members.

Doyle et al. disclose wherein tubular members (32, Fig.1) are used in a structure formed of a castable material.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the structure of Mangone with tubular members in place of solid rods in order to decrease the overall weight of the structure while increasing the strength of the structure as taught by Doyle et al. The formation of tubular members will decrease the overall weight, require less material, reduce the cost, and provide stability and strength to the structure of Mangone.

Claims 2-6 and 9-17:

Mangone in view of Doyle et al. discloses the structural element of claim 1:

Regarding claim 2, Mangone also discloses wherein the members are produced from glass fiber and plastics (Column 9, lines 62-62).

Regarding claim 3, Doyle does not directly disclose wherein a surface area of the members that contact the castable material are abraded, but discloses wherein the pultruded base is covered in an epoxy and a layer of aggregate or crushed stone (42, Fig.2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have covered the hollow tubes also with an epoxy and a layer of aggregate or crushed stone. The aggregate layer provides positive and permanent bonding with the castable material that is places around the hollow tubes.

Regarding claim 4, Doyle does not directly disclose wherein the members are coated with gravel, but discloses wherein the pultruded base is covered in an epoxy and a layer of aggregate or crushed stone (42, Fig.2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have covered the hollow tubes also with an epoxy and a layer of aggregate or crushed stone. The aggregate layer provides positive and permanent bonding with the castable material that is places around the hollow tubes.

Regarding claim 5, Doyle discloses wherein the tubular members are pultruded fiber reinforced plastic (Page 2, Paragraph [0015]).

Regarding claim 6, Doyle discloses wherein the tubular members are hollow (32, Fig.1).

Regarding claim 9, Mangone discloses wherein the spacer members and interconnecting members are constructed from the same fiber reinforced plastic (Column 9, lines 62-65).

Regarding claim 10, Mangone does not directly disclose wherein the spacer members and interconnecting members have greater strength than transverse strength of the tubular members.

Mangone does disclose wherein the members are formed from the same materials and therefore the strength of the spacer members and the interconnecting members when intersected will be greater than a tubular members made from the same material. It would have been obvious to have formed the spacer members and interconnecting members with greater strength, if the strength of the members will enhance and support the strength of the structure overall.

Regarding claim 11, Mangone discloses wherein the interconnecting members pass through the spacer members (the members 8 pass through the slots in 6, Fig.2).

Regarding claim 12, Mangone discloses wherein the spacer members pass through the interconnecting members (the spacer members 6 pass through the slots in 8 and the slots in 12, Fig.2).

Regarding claim 13, Mangone discloses wherein slots are located on both of the interconnecting members and spacer members (22, 24, and 14, Fig.2).

Regarding claim 14, Mangone discloses wherein the interconnecting members and spacer members are locked to each other (22, 24, and 14, Fig.2).

Regarding claim 15, Mangone discloses wherein notches are provided in the interconnecting members and/or spacer members to engage with the slot on the other of the interconnecting member or spacer member to lock the interconnecting members and spacer members together (22, 24, 14, Fig.2).

Regarding claim 16, Mangone discloses wherein the interconnecting members are oriented so that they are substantially perpendicular to the spacer members (Fig.1).

Regarding claim 17, Mangone discloses wherein the castable material is usually concrete (56, Fig.5).

Claims 7-8 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,806,121 to Mangone in view of US 2001/0037533 A1 to Doyle et al. in view of US 5,839,249 to Roberts.

Claims 7-8:

Mangone in view of Doyle et al. discloses the structural element of claim 1, but does not disclose wherein the tubular members are filled with standard concrete and a metal reinforcing bar.

Roberts discloses wherein concrete (Column 4, lines 10-13, and lines 66-67; Column 5, lines 1-3) and a metal reinforcing bar are placed in a circular opening in a structure element (24, Fig.1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the structural element of Mangone with the tubular elements that are reinforced with concrete and metal reinforcements. The addition of concrete and the metal reinforcements will provide a high strength wall and will support the wall when encountered with forces. The use of rebar and concrete grouting is notoriously well known in the art of concrete structures.

Claim 18:

Mangone in view of Doyle et al. discloses the structural element of claim 17, but does not disclose wherein the concrete is a filled resin system.

Roberts discloses wherein the castable material is a filled resin system (Column 3, lines 39-41).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the structural element of Mangone from a resin filled system since resin filled structural elements have great strength and also less weight. It is notoriously well known to form structural elements from resin filled systems.

Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sitzman et al. in view of US 5,806,121 to Mangone in view of US 2001/0037533 A1 to Doyle et al.

Claim 19:

Sitzman discloses a method of producing a structural element formed from castable material, said method including the steps of:

producing a mould that has a portion of an outer shape of the structural element to be produced (20, Fig.7-13);

placing tubular members (12) within the mould locating castable material (21) between and over said members;

allowing said castable material to set to form said structural element (11).

Sitzman does not disclose fiber reinforced plastic, tubular members, spacer members; and fiber reinforced plastic, interconnecting members; such that said spacer members extending between said plurality of tubular members and said interconnecting members are positioned in a different orientation to said spacing members; so the spacing members and interconnecting members intersect.

Mangone discloses fiber reinforced plastic members (10, Fig.1), spacer members (6, Fig.1); and fiber reinforced plastic, interconnecting members (8 and 12, Fig.1); such that said spacer members extending between said plurality of members and said interconnecting members are positioned in a different orientation to said spacing members; so the spacing members and interconnecting members intersect (Fig.1).

Doyle et al. discloses fiber reinforced tubular members (32, Fig.1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the reinforcements of Sitzman from fiber reinforced plastic in order to enhance the strength and rigidity of the structural element. It would also have been obvious to have including spacer members and interconnecting members in order to further strengthen the structural element. The tubular members formed from a fiber reinforced plastic such as taught by Mangone and Doyle will greatly enhance the strength and will not collapse like a cardboard or paper tubular member may collapse under the weight of the concrete.

Claim 20:

Sitzman et al. in view of Mangone in view of Doyle et al. disclose the method of claim 19, Doyle does not directly disclose wherein a surface area of the members that contact the castable material are abraded, but discloses wherein the pultruded base is covered in an epoxy and a layer of aggregate or crushed stone (42, Fig.2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have covered the hollow tubes also with an epoxy and a layer of aggregate or crushed stone. The aggregate layer provides positive and permanent bonding with the castable material that is places around the hollow tubes.

Claim 21:

Sitzman et al. in view of Mangone in view of Doyle et al. disclose the method of claim 19, Doyle does not directly disclose wherein the members are coated with gravel, but discloses wherein the pultruded base is covered in an epoxy and a layer of aggregate or crushed stone (42, Fig.2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have covered the hollow tubes also with an epoxy and a layer of aggregate or crushed stone. The aggregate layer provides positive and permanent bonding with the castable material that is places around the hollow tubes.

Claim 22:

Sitzman et al. in view of Mangone in view of Doyle et al. disclose the method of claim 19, Sitzman discloses wherein the members are located within the mould and castable material poured over the members (Fig. 7-13).

Claim 23:

Sitzman et al. in view of Mangone in view of Doyle et al. disclose the method of claim 19, Sitzman discloses wherein the members are located within the mould after sufficient castable material to complete the structural element has been delivered into the mould (Fig.9 and 12).

Claim 24:

Sitzman et al. in view of Mangone in view of Doyle et al. disclose the method of claim 19, Sitzman discloses wherein a portion of castable material is introduced into the mould and some of the members introduced into the mould and then more castable material is introduced into the mould and more members are introduced into the mould (Fig.7-13).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN D. KWIECINSKI whose telephone number is (571)272-5160. The examiner can normally be reached on Monday - Friday from 9 am to 5 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basil Katcheves can be reached on (571)272-6846. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RDK

/Ryan D Kwiecinski/
Examiner, Art Unit 3635
/Basil Katcheves/
Primary Examiner, Art Unit 3635